

DERWENT-ACC-NO: 1992-346882

DERWENT-WEEK: 199242

COPYRIGHT 1999 DERWENT INFORMATION LTD

TITLE: Tolerating link faults in D-dimensional mesh - using wild-card dimensions and error correcting codes e.g. extended Reed-Solomon codes theory

PATENT-ASSIGNEE: ANONYMOUS[ANON]

PRIORITY-DATA: 1992RD-0341004 (August 20, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
RD 341004 A	September 10, 1992	N/A	001	H04L 000/00

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
RD 341004A	N/A 1	992RD-0341004	August 20, 1992

INT-CL (IPC): H04L000/00

ABSTRACTED-PUB-NO: RD 341004A

BASIC-ABSTRACT:

Using techniques from error correcting codes specifically a Maximum Distance Separable (MDS) code e.g. the extended Reed-Solomon codes and an extension of the Vandermonde matrix, a d-dimensional fault-tolerant mesh is constructed which has degree $2s$ and can tolerate $2s-2d+1$ edge faults, for any d less than s less than $n+1$, regardless of the faults distribution.

The faults are tolerated in the sense that the remaining fault free network still guaranteed to contain a d-dimensional mesh of the same size as a subgraph.

ADVANTAGE - Programs designed for original mesh can be run on fault tolerant mesh without slowdown, even after up to $2s-2d+1$ link failures

CHOSEN-DRAWING: Dwg. 0/0

TITLE-TERMS: TOLERATE LINK FAULT DIMENSION MESH WILD CARD DIMENSION ERROR CORRECT CODE EXTEND REED CODE THEORY

ADDL-INDEXING-TERMS: HYPERCUBE

DERWENT-CLASS: W01

EPI-CODES: W01-A01B; W01-A06A1; W01-A06B9;

SECONDARY-ACC-NO:

Non-CPI Secondary Accession Numbers: N1992-264491